

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claims 1-31 (Canceled)

32. (New) A method of immobilization of a mediator molecule on an implant material, comprising:
- covalently binding an anchor molecule to a chemically activated surface of the implant material, wherein the anchor molecule has a functional group having sufficient reactivity to allow covalent binding of a chemical compound;
- immobilizing a mediator molecule on the implant material using the functional group;
- wherein the mediator molecule comprises a biomolecule that at least one of (a) reduces rejection of the implant material, and (b) promotes growing-in of the implant material; and
- wherein said implant material comprises at least one component selected from the group consisting of a metal, a metallic alloy, and a ceramic material.
33. (New) The method according to claim 32 wherein the anchor molecule comprises an aminoalkylsilane molecule.
34. (New) The method according to claim 32 wherein the chemically activated surface of the implant material is provided with an oxide layer prior to covalent binding of the anchor molecule.
35. (New) A method of immobilization of a mediator molecule on an implant material, comprising:

covalently binding an anchor molecule to a chemically activated surface of the implant material, wherein the anchor molecule has a functional group having sufficient reactivity to allow covalent binding of a chemical compound;

immobilizing a mediator molecule on the implant material using the functional group;

wherein the mediator molecule is a biomolecule selected from the group consisting of a bone growth factor from the class of the BMP proteins, a ubiquitin, and an antibiotic.

36. (New) The method according to claim 35 wherein the bone growth factor is BMP-2 or BMP-7.

37. (New) The method according to claim 35 wherein the implant material comprises at least one component selected from the group consisting of a metal, a metallic alloy, and a ceramic material.

38. (New) A method of immobilization of a mediator molecule on an implant material, comprising:

covalently binding an anchor molecule to a chemically activated surface of the implant material, wherein the anchor molecule has a functional group having sufficient reactivity to allow covalent binding of a chemical compound;

binding a spacer molecule to the anchor molecule, wherein the spacer molecule has an additional functional group having sufficient reactivity for covalent binding of the mediator molecule;

immobilizing a mediator molecule on the implant material using the additional functional group;

wherein the mediator molecule comprises a biomolecule that at least one of (a) reduces rejection of the implant material, and (b) promotes growing-in of the implant material; and

wherein said implant material comprises at least one component selected from the group consisting of a metal, a metallic alloy, and a ceramic material.

39. (New) The method according to claim 38 wherein the spacer molecule reduces nonspecific absorption of the mediator molecule to the implant material.
40. (New) The method according to claim 39 wherein the spacer molecule comprises an agarose molecule.
41. (New) An implant produced by the method of claim 32.
42. (New) The implant according to claim 41 wherein the implant material is selected from the group consisting of titanium, a titanium alloy, aluminum, stainless steel, and hydroxyapatite.
43. (New) An implant produced by the method of claim 35.
44. (New) The implant according to claim 43 wherein the implant material is selected from the group consisting of titanium, a titanium alloy, aluminum, stainless steel, and hydroxyapatite.